

REMARKS

Upon entry of the present amendment, Amendment-E, the claims in the application are claims 2-12 and 14-18 and 20-28, of which claims 3-5 are independent. Claims 4 and 5 have been allowed, which applicant gratefully acknowledges. Claims 13 and 19 were cancelled in previous amendment.

Amendments

In the specification, the paragraph beginning on page 1, line 15, and page 10, line 1, have amended to correct typographical errors. The paragraph beginning on page 12, line 4, has been amended to clarify that the repeated calling signal transmitted from the mobile repeater station M will be received by a low earth communication satellite located above the mobile repeater station.

The paragraph beginning on page 15, line 4, has been amended to clarify that, “.....a call for the called portable communication terminal will be made through the selected mobile repeater station thereby providing highest quality communication between the portable communication terminals.”

In the claims, claim 3 has been amended herein to further define that each said mobile repeater station is operable with any of said portable communication terminals, in land mobile satellite communication system of the claimed invention. Claims 4 and 5, having allowable subject matter as indicated by the Examiner, have been amended for consistency and for correcting antecedent basis errors.

Claim 20 has been amended to further specify that wherein the communication link having highest signal quality is selectively established via the one of the plurality of communication channels including said mobile repeater station with appropriate proximity to

the specific communication terminal thereby providing highest quality communication between the portable communication terminals.

New claims 24-28 have been added to define further aspects of the invention.

Applicant respectfully submits that the above amendments are fully supported by the original disclosure including drawings, and that no new matter has been introduced into the application by the above amendments. According, applicant respectfully requests the rejections be reconsidered and withdrawn.

Applicant further respectfully submits that new claims 24-28 are fully supported by the original disclosure including drawings (Figs. 1-4 and discussion thereof) including discussions at page 8, lines 25-30, page 19, lines 11- page 20, lines 22, and no new matter is introduced into the application by these new claims.

Claim Rejections

1. In the Office Action (page 2, item 2), the Examiner rejects claims 3, 14-16, 21-23 under 35 USC § 103(a) as being unpatentable over Karabinis (US 5,937,332) in view of Marko (US 6,510,317).

In his rejection of claim 3, the Examiner states that Karabinis teaches the land mobile satellite communication system (Fig. 2) comprising: at least one communication satellite station (satellite 110); a plurality of portable communication terminals 120 for communicating with each other through communication link to be formed to include at least one communication satellite station; and a plurality of mobile repeater stations 200 mounted on mobiles located on the earth for repeating a communication in the communication link formed between the portable communication terminals and including at least one communication satellite station.

Further, according to the Examiner's interpretation, Marko discloses a communication link between any specific one of the communication terminals 20 and any specific one of said at least one communication satellite station (12, 14), and such links can be established via a plurality of communication channels, respectively, including different ones of the mobile repeater stations 16. Therefore, according the Examiner, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Karabinis with the above teaching of Marko, in order to improve signal reception quality at the communication terminal by using diversity receiving technique.

In the rejection of claims 14-16, the Examiner states that Karabinis teaches the mobiles are vehicles, the power supplies of the vehicle provide power to the mobile repeater station and the mobile repeater station include high frequency plane antenna; and in the rejection of claims 21-23, the Examiner states that the combination of Karabinis and Marko discloses the claimed limitation.

Applicant's Response:

Upon careful consideration and in light of the above amendments, applicant respectfully submits that the rejection is overcome, and that claim 3 is patentably distinct over the disclosures of Karabinis and Marko for several reasons, including those given below.

Initially, Karabinis' repeater and method are fundamentally distinct from the claimed invention because he discloses the repeater for use within a satellite communication system. Karabinis' repeaters are clearly described as devices which merely receive, amplify, and locally transmit signals to and from communications satellites. Further, Karabinis does not teach anything related to different frequencies of carrier waves.

Still further, Marko discloses receivers 20 that may be located in automobiles, handheld or stationary units for home or office use, and the satellite digital audio service system receivers

20 are designed to receive one or both of satellite signals and signals from terrestrial repeaters, and combine or select one of the signals as the receiver output (col. 3, lines 52-58 and Fig. 1).

Although, Marko discloses the repeaters, he fails to disclose a plurality of communication channels for establishing a communication link between any specific one of the communication terminals and any specific one of the at least one communication satellite radio station.

Therefore, any hypothetical combination of the teachings of Karabinis and Marko based on the actual teachings of these references does not achieve the claimed invention, particularly as recited in claim 3.

Moreover, in the claimed invention (claim 3), as amended, each mobile repeater station is operable with any of said portable communications terminals. In general, however, no special relationship exists between a driver of an automobile which carries a mobile repeater station and user of the portable communication terminals who communicate using their own portable communication terminals through communication links formed to that mobile repeater station. Therefore, claim 3 is believed to be further patentably distinct over the applied references.

*The applicable standard for establishing a *prima facie* case of obviousness:*

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness. See *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A *prima facie* case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See *In re Lintner*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Furthermore, the conclusion that the claimed subject matter is *prima facie* obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on § 103 must rest on a factual basis, with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

The Federal Circuit has repeatedly cautioned against employing hindsight by using the appellant's disclosure as a blueprint to reconstruct the claimed invention from the isolated teachings of the prior art. See, e.g., *Grain Processing Corp. v. American Maize-Products Co.*, 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988). When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.'" *In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence." *In re Dembiczzak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

Applicant respectfully suggests that the Examiner appears to be evaluating applicant's invention using improper hindsight, picking and choosing selected portions of the references and combining those selected portions to reconstruct a mosaic of applicant's invention.

Applicant respectfully suggests that such an approach is not consistent with the standards set out in the above-quoted cases of the CAFC.

Also, the claimed invention as recited in claims 14-16 and 21-23 is patentably distinct over disclosures of Karabinis and Marko, either considered singly or in combination, for those reasons discussed in relation to claim 3 and because the references fail to teach or make obvious additional features set forth in these dependent claims. For example, the references fail to disclose that the repeater stations include high frequency plane antennas, as recited in claim 16. This feature is advantageous as discussed at page 6, lines 24-33 of the specification.

For all of the foregoing reasons, claims 3, 14-16 and 21-23 are believed to be clearly patentably distinct over Karabinis in view of Marko, and accordingly applicant requests reconsideration and withdrawal of the rejection of these claims under USC § 103(a).

2. In the Office Action (page 3, item 3), the Examiner rejected claims 2 and 6-12 under 35 USC § 103(a) as being unpatentable over Karabinis in view of Marko and Wesel (US Publication Number 20040157554).

Applicant's Response:

Upon careful consideration and in light of the above amendments, applicant respectfully submits that the rejection is overcome, and that claims 2 and 6-12 are patentably distinct over the disclosures of Karabinis and Marko for the reasons discussed in relation to claim 3, hereinabove, and for the followings reasons.

Initially, although, Karabinis as modified by Marko teaches a plurality of communication satellite stations, the applied references including Wesel fail to teach that each satellite station has a means for communicating with each other through inter-satellite links, particularly as required

by claim 2.

Rather, Wesel teaches a communication system 10 having a plurality of communication satellites, both in geostationary earth orbit (GEO) 12 and in non-geostationary or in non-geostationary earth orbit (NGSO) 14 and 15, a ground station 16 for controlling and maintaining operation of the satellites 12, 14 and 15, and user terminals in the form of either mobile devices 18 or portable devices 20, and a system access node 22 situated in each region serviced by satellites 12, 14, and 15. Wesel also teaches positioning of satellites 12, 14 and 15 in two different constellations to provide efficient global coverage.

Further, the proposed modification based on select teachings of Wesel is improperly based on suggestions coming entirely from the Examiner rather than from any evidence of record. These references do not provide any reason, suggestion or motivation to include the means for communicating with other stations through inter-satellite links as taught by Wesel within system disclosed by Karabinis as proposed by the Examiner. Given the stated limited function of the Karabinis's repeater, that is, a device for signal reception, amplification and transmission only there is no reason (apart from impermissible hindsight from applicant's disclosure) to include each satellite station having a means for communicating with each other through inter-satellite links, as recited in claim 2.

Regarding claim 6, Karabinis fails to teach that the portable communication terminals include a means for communicating with the mobile repeater stations and conventional land mobile communication systems, as recited in claim 6. Conversely, in the satellite communication system of Karabinis, a repeater 200 is provided to increase the ability of uplink signals 180 and downlink signals 170 to compensate for shadowing and or blockage caused by terrain, trees, foliage, and buildings thus effectively increasing the link margin between

satellites 110 and hand-held radiotelephones 120.

Karabinis further discloses that amplified and retransmitted downlink signals 175 may be received by any number of radiotelephones 120 within the effective signal radius of the satellite telecommunications repeaters 200, and that the satellite telecommunications repeaters 200 also receive uplink signals 180 from one or more radiotelephones 120 by way of at least one uplink signal receiving antenna 300 (col. 4, lines 61-67 – col. 5, lines 1-21, col. 6, lines 11-14, Fig. 2).

Regarding claim 7, Karabinis never discloses the repeaters having a means for converting frequency and modulation for communication by changing software to allow communication with conventional land mobile systems.

Rather, Karabinis specifically discloses that there is no further processing of the actual signal. Also, Karabinis discloses that the satellite telecommunications repeaters 200 receive uplink signals 180 from one or more radiotelephones 120 by way of at least one uplink signal receiving antenna 300, and that after the uplink signal is received by the uplink receiving antenna 300, the signal is passed through a filter 310 to eliminate noise and out of band signals (col. 6, lines 11-23). Thus, Karabinis's repeaters do not include means for converting frequency and modulation, as required by claim 7.

Regarding claims 8 and 9, Karabinis fails to teach a repeater that is able to aim its antenna based on a position data received from the satellite, and in fact, Karabinis teaches manual adjustment of the orientation of the repeater housing to obtain an optimal signal (col. 9, lines 13-49, Fig. 7). None of the references of Karabinis, Wesel and Marko or a combination thereof, teaches any feature corresponding to the satellite position information transmitting means or the capability of the mobile repeater aiming an antenna based on this transmitted information, as

required by each of claims 8 and 9.

Regarding claim 10, Wesel does not teach any feature corresponding to use of Proxies or Peering points in order to gain accessibility to land telephone systems or the internet as recited in claim 10. Instead, Wesel teaches that the user terminal 18, 20 can transmit different types of signal and that the terminal may select which type of signal to transmit (page 4, paragraph 0042). Thus, claim 10 is patentably distinct over the applied references.

Regarding claims 11 and 12, although, Karabinis teaches a repeater, his repeater performs a stated limited function, specifically to only receive, amplify and transmit data. Karabinis, thus, fails to teach the satellite communication station having a means for storing data and acting as a server, as required by claim 11. Further, Karabinis fails to teach mobile repeater stations having a means for responding to a request from the communication satellite stations and/or portable communication terminals and for functioning as providers, as required by claim 12.

For all of the foregoing reasons, claims 2 and 6-12 are believed to be clearly patentably distinct over Karabinis in view of Marko and Wesel, and accordingly applicant requests reconsideration and withdrawal of the rejection of claims 2 and 6-12 under USC § 103(a).

3. Also in the above-identified Office Action (page 6, item 4), the Examiner rejected claim 17 under 35 USC 103(a) as being unpatentable over Karabinis in view of Marko and Lorbeck (US Patent Publication No. 2003 0114135).

Applicant's Response:

Upon careful consideration and in light of the above amendments, applicant respectfully submits that the rejection is overcome, and that claim 17 is patentably distinct over the disclosures of Karabinis and Marko for the reasons discussed in relation to claims 2 and 3,

hereinabove, which are not overcome by additional teachings of Lorbec, and because the applied references, either considered singly or in combination, fail to teach the communications between the portable communication terminals and the mobile repeater stations use S or near S frequency band ranging from 1-10 Ghz, and communications between the low earth communication satellite station and the mobile repeater stations use high frequency Ku band, as recited in claim 17. This feature is unobviously advantageous as discussed at page 6, line 34 – page 8, line 13, of the specification.

For all of the foregoing reasons, claim 17 is believed to be clearly patentably distinct over Karabinis in view of Marko and Lorbeck, and accordingly applicant requests consideration and withdrawal of the rejection of claim 17 under USC § 103(a).

4. Further in the above-identified Office Action (page 6, item 5), the Examiner rejected claims 18 and 20 under 35 USC 103(a) as being unpatentable over Karabinis in view of Marko and Wilson (US Patent 6,141,533).

Applicant's Response:

Upon careful consideration and in light of the above amendments, applicant respectfully submits that the rejection is overcome, and that claims 18 and 20 are patentably distinct over the disclosures of Karabinis and Marko for the reasons discussed in relation to claims 2 and 3, hereinabove, which are not overcome by additional teachings of Wilson, and because these references, either considered singly or in combination, fail to teach the repeater stations having functions of cache, proxy and server for storing transferred data, as required by claim 18; and also fail to teach the communication link which is selectively established via the one of the plurality of communication channels including said mobile repeater station with appropriate

proximity to the specific communication terminal and giving highest signal quality, as required by claim 20.

For all of the foregoing reasons, claims 18 and 20 are believed to be clearly patentably distinct over Karabinis in view of Marko and Wilson, and accordingly applicant requests consideration and withdrawal of the rejection of claims 18 and 20 under USC § 103(a).

Conclusion

In conclusion, applicant has overcome the Examiner's rejection as presented in the Office Action. Moreover, applicant has considered all additional references of record, and it is respectfully suggested that none of these additional references of record, considered either singly or in any combination, teach applicant's invention, as presently claimed and that further, skill generally available in the art would not lead to a person of ordinary skill to create applicant's claimed invention, using the references of record.

Further, applicant respectfully suggests that new claims 24-28 are patentably distinct over the disclosures of references of record for reasons discussed in relation to claim 3 and based on the merits of the additional features recited in these new claims.

The application is now believed to be in condition for allowance, and a notice to this effect is earnestly solicited.

The Commissioner is hereby authorized to charge \$250.00 for five claims in excess of 20, as well as to charge any deficiency which may be required during the entire pendency of the application, and to credit any excess paid during the entire pendency of the application, to Deposit Account 50-0744 in the name of Carrier, Blackman & Associates, P.C.

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proximity to the specific communication terminal and giving highest signal quality, as required by claim 20.

For all of the foregoing reasons, claims 18 and 20 are believed to be clearly patentably distinct over Karabinis in view of Marko and Wilson, and accordingly applicant requests consideration and withdrawal of the rejection of claims 18 and 20 under USC § 103(a).

Conclusion

In conclusion, applicant has overcome the Examiner's rejection as presented in the Office Action. Moreover, applicant has considered all additional references of record, and it is respectfully suggested that none of these additional references of record, considered either singly or in any combination, teach applicant's invention, as presently claimed and that further, skill generally available in the art would not lead to a person of ordinary skill to create applicant's claimed invention, using the references of record.

Further, applicant respectfully suggests that new claims 24-28 are patentably distinct over the disclosures of references of record for reasons discussed in relation to claim 3 and based on the merits of the additional features recited in these new claims.

The application is now believed to be in condition for allowance, and a notice to this effect is earnestly solicited.

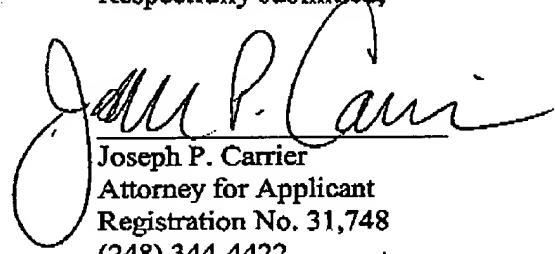
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If the Examiner is not fully convinced of all of the claims now in the application, applicant respectfully requests that he telephonically contact applicant's undersigned representative to expeditiously resolve prosecution of the application.

Favorable reconsideration is respectfully requested.

Respectfully submitted,


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28 October 2005

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Dated: 28 October 2005